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STATISTICAL BULLETIN
Metropolitan Life Insurance Co.

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NINETEEN TWENTY-FOUR MAY BE A RECORD HEALTH YEAR.

As 1924 draws to a close, the following are the outstanding items in the year's health record. They are based on the cumulative death-rates of more than 15,000,000 Industrial policyholders of the Metropolitan Life Insurance Company, calculated up to November 15th.

The general deathrate for 1924 will probably be the lowest in the history of this important cross-section of the population of the United States and Canada. With only seven weeks of the year remaining, the deathrate for all causes combined is 5.8 per cent. below that shown at this time in 1923; it is also lower than that for 1922, and it now looks as though it will surpass even the prior minimum rate established in 1921.

The following facts are apparent concerning the mortality record for diseases of major public health interest. No doubt now remains that the year will register a new minimum deathrate for tuberculosis and for typhoid fever. The record for the principal epidemic diseases of childhood is highly satisfactory. The diphtheria deathrate is lower than ever before, and deaths from measles are fewer than last year. The whooping cough rate shows no increase despite the larger exposure to risk in 1924 of infant lives. The scarlet fever rate is a trifle higher than for last year, but is, nevertheless, below the average for the last decade. The mortality from influenza is less than half that of last year; a slight rise in the rate for diarrheal diseases is chargeable entirely to increased coverage of infant lives; the same is true of pneumonia.

There is no more gratifying item in the record of this year than the improvement in the mortality from diseases incidental to

maternity. Barring unexpected developments in the final seven weeks, a new minimum deathrate will be established.

Organic heart disease, as in 1923 and 1922, will be the leading cause of death; but the rate is now about seven per cent. less than at this time last year. Cancer mortality has declined slightly as has that for cerebral hemorrhage. Deaths from chronic nephritis have decreased eight per cent. and a new minimum will probably be registered for this disease. A decline of 11.4 per cent. in diabetes mortality may be credited, largely, to the increasing use of insulin.

The record for violent deaths is also distinctly encouraging. Slight declines as compared with last year are shown not only for suicides and homicides, but for accidents. Automobile fatalities, to date, have not increased over the preceding year. It looks as though we had reached the peak in the mortality from this, the greatest single item in the fatal accident record.

THE PROBABILITY OF DYING EVENTUALLY FROM HEART DISEASE.

A child at ten years of age is, under present conditions, three times as likely to die eventually from heart disease as from tuberculosis. This disparity between the chances of death from heart disease and from tuberculosis increases with advancing age—more rapidly for females than for males. At age thirty-five, the probability of dying eventually from heart disease among males is nearly four times that for tuberculosis; among females, the chance of death from heart disease is almost six times that for tuberculosis. Detailed facts are shown in the table on page 3.

The table shows that about one in every five of the population living at age ten will eventually succumb to organic heart disease. This figure is, of course, higher after age 40 than before. The probability of death from heart disease is higher for women than for men. For tuberculosis, the hazard decreases with advancing age; for organic heart diseases, it increases; and this is one of the primary differentials in the age statistics of diseases of the circulatory system. The age data for heart disease reflect the wear-and-tear, or senility, factor in human mortality.

The purpose of this note is, however, to suggest that at least as much attention ought at this time to be paid to the prevention of heart disease and to its treatment or amelioration as to tuberculosis. During the past three decades an international movement for the

control of tuberculosis mortality has been in effective operation. Facilities have been provided for public education in personal, domestic and industrial hygiene, for the early recognition and prompt treatment of incipient tuberculosis, for the isolation and treatment of advanced cases, and for productive research into causative and

Probability of Dying Eventually of Organic Heart Diseases and of Tuberculosis at Selected Ages. Figures Based Upon Experience of United States Registration States, 1922.

AGE	Organic Diseases of Heart		Tuberculosis		Per Cent. Heart Diseases of Tuberculosis	
	Males	Females	Males	Females	Males	Females
10	.1822	.1878	.0684	.0606	267	310
15	.1833	.1885	.0685	.0599	268	315
20	.1856	.1908	.0665	.0554	279	345
25	.1888	.1940	.0613	.0483	308	403
30	.1922	.1975	.0556	.0416	346	475
35	.1960	.2012	.0502	.0361	390	558
40	.2002	.2051	.0450	.0314	445	654
45	.2050	.2090	.0395	.0275	519	760
50	.2093	.2127	.0344	.0242	609	878
55	.2138	.2167	.0295	.0213	725	1017
60	.2182	.2210	.0245	.0189	890	1170
65	.2227	.2253	.0197	.0162	1130	1391
70	.2264	.2284	.0144	.0129	1572	1770
75	.2282	.2286	.0100	.0096	2282	2380
80	.2262	.2240	.0066	.0059	3427	3900
85	.2167	.2147	.0043	.0041	5040	5240

other aspects of the disease. At the present time, however, organized effort for the study of heart disease is limited to a few organizations, inadequately supported, and to departments of internal medicine in isolated medical schools. There is clearly a call for a re-valuation of the effort now being expended on the study of heart diseases and for the statement of a programme of research, treatment and public education commensurate with the importance of these diseases as sources of preventable or postponable death.

PNEUMONIA DEATHRATES AMONG INDUSTRIAL POPULATIONS OF AMERICAN STATES AND CANADIAN PROVINCES.

There is in the United States a well defined pneumonia region. It consists of the New England and Middle Atlantic States together with two other Atlantic Seaboard States, Delaware and Maryland,

and West Virginia. Aside from this territory only two states, Michigan and Colorado, recorded above-average pneumonia deathrates in 1923, according to the mortality records of the fifteen million Industrial policyholders of the Metropolitan Life Insurance Company, distributed through practically all of the United States and Canada.

Considered as a region, the Middle Atlantic States suffered the maximum pneumonia deathrate in either the United States or Canada, with New England ranking second, the Eastern Provinces of Canada third, and the South Atlantic States fourth.

Pennsylvania in 1923 registered, far and away, the highest pneumonia mortality of any state or province, its deathrate of 100 per 100,000 being 22 per cent. in excess of the figure for Maryland (82.1) which ranked second. Rhode Island (79.2), New York (78.5), Colorado (76.9), New Jersey (74.4), Massachusetts (73.3), Michigan (72.4), Delaware (73.0) and West Virginia (71.0), are the states which had in 1923 deathrates in excess of the average for the United States as a whole.

The comparative figures for pneumonia mortality suggest a number of possible causes which should be carefully looked into. Certain occupational influences, racial susceptibility, differences in age distribution—all play some part. But probably the most important item will be found to be a combination of low temperatures and high humidity. As a general thing, indeed, high humidity is shown to be more of a factor than extreme cold; but it is the combination of the two which makes for high pneumonia deathrates. That a cold climate *alone*, and more especially a cold, dry climate, does not cause high pneumonia mortality, is clearly shown by the extremely low rates which prevail in the Western Provinces of Canada. That high humidity *alone* is not a considerable factor is shown by the relatively low deathrates of certain of the South Atlantic States like Virginia, the Carolinas, Georgia and Florida. The contrast between the extremely low pneumonia mortality of Oregon and Washington on the Pacific Coast, with the high deathrates of the Middle Atlantic States and New England, is startling in view of the fact that these regions are practically in the same altitude.

The very high mortality in the State of Pennsylvania has been observed for many years and prevails not only in the cities but in the rural districts. Possibly the very high deathrate is attributable, to some extent at least, to the hazards attending the two principal occupations of the State, namely coal mining and the manufacture of iron and steel. Two of the largest Pennsylvania cities, Pittsburgh

and Scranton, register, year after year, pneumonia deathrates amounting to double or triple those for the Registration Area. The deathrate is usually much above the average in Philadelphia also, and the same may be said of some of the smaller cities, but more particularly of those in the mining districts. In New York and New Jersey a number of cities usually record pneumonia deathrates which are much above the average. Notable among these are New York City, Troy, Middletown, Ithaca, Cortland and a number of smaller cities in New York; and Camden, Orange, Hoboken, Jersey City and other New Jersey cities. Baltimore, in Maryland; Boston, Cambridge, Lowell and New Bedford, in Massachusetts; are other examples of cities which record high pneumonia mortality and which, in these particular statistics, relating as they do to the industrial urban population, are largely responsible for the high pneumonia deathrates in their respective states.

Year after year, and in every part of the United States, without exception, the pneumonia deathrate runs much higher in the cities than in the rural districts.

It is interesting to compare the regional distribution of pneumonia mortality in the United States with that of tuberculosis. The two pictures are different in many respects. Pennsylvania, for example, which shows the very highest deathrate for pneumonia, is actually below the average with respect to tuberculosis. The other two Middle States, New York and New Jersey, and Rhode Island, with their very high pneumonia mortality, are just above average with respect to tuberculosis. Massachusetts is another example of a state where the death toll of pneumonia is high while that of tuberculosis is lower than for most of the other states, and the same may be said of Delaware. In the East South Central Region, we find exceptionally high tuberculosis mortality in Kentucky and Tennessee, with low deathrates for pneumonia, and the same applies to Louisiana in the West South Central Region. In Canada, Nova Scotia is an outstanding example of a high tuberculosis rate and a relatively low one for pneumonia. Among the states which register above-average deathrates for both diseases are Maryland, West Virginia and Colorado, together with New Brunswick and Quebec in Canada.

The foregoing comments relate exclusively to white policyholders. The pneumonia deathrate runs much higher everywhere among colored persons. Among the colored it is observed that in some of the South Atlantic States, the pneumonia deathrate runs considerable higher than in many more northerly communities.

Deathrates per 100,000 Persons Exposed. Pneumonia, all Forms. By Geographic Division, State and Province. Metropolitan Life Insurance Company, Industrial Department, 1923. (Excluding Infants under One Year of Age.)

Geographic Division	Rates per 100,000	
	White	Colored
Total Company	68.5	136.7
United States	68.6	136.7
New England	70.6	107.4
Maine	59.1	*
New Hampshire	65.2	*
Vermont	59.6	*
Massachusetts	73.3	108.5
Rhode Island	79.2	*
Connecticut	65.5	129.7
Middle Atlantic	83.8	175.1
New York	78.5	172.2
New Jersey	74.4	159.3
Pennsylvania	100.0	183.8
East North Central	56.6	136.4
Ohio	50.4	137.2
Indiana	50.9	126.7
Illinois	59.6	124.0
Michigan	72.4	238.9
Wisconsin	46.3	*
West North Central	54.4	128.9
Minnesota	48.2	*
Iowa	32.8	90.5
Missouri	60.0	158.2
Nebraska	38.5	76.7
Kansas	56.1	80.1
South Atlantic	62.7	138.8
Delaware	73.0	120.6
Maryland	82.1	194.4
District of Columbia	56.8	197.6
Virginia	40.7	124.7
West Virginia	71.0	123.4
North Carolina	51.5	143.9
South Atlantic (Cont.)		
South Carolina	46.8	95.6
Georgia	52.2	119.0
Florida	52.0	72.6
East South Central	55.9	114.5
Kentucky	57.9	122.1
Tennessee	59.5	103.5
Alabama	43.1	129.1
West South Central	50.7	91.8
Arkansas	53.3	88.8
Louisiana	47.3	94.4
Oklahoma	48.5	*
Mountain	45.7	*
Montana	40.6	*
Idaho	8.9	*
Colorado	76.9	*
Utah	38.0	*
Pacific	44.2	63.0
Washington	22.2	65.2
Oregon	35.1	†
California	51.1	65.5
Canada	64.6	*
Eastern Provinces	68.7	*
Nova Scotia	59.6	*
New Brunswick	79.4	*
Quebec	83.7	*
Ontario	49.0	*
Western Provinces	32.6	*
Manitoba	36.0	*
Saskatchewan	41.6	*
Alberta	29.0	*
British Columbia	28.4	*

*Deathrate not calculated on account of small number of Industrial Policyholders.
†No deaths.

MORTALITY ACCORDING TO SPINE LENGTH.

At the recent annual meeting of the Association of Life Insurance Medical Directors held at Newark, N. J., the second report of the

Committee on Dreyer measurements was presented. This Committee has for several years attempted to discover the relationship between longevity, on the one hand, and certain physical measurements, on the other. These measurements include height, weight, chest circumference and spine length, among others. The problem has been to determine what types of build involving these measurements are associated with the lowest mortality.

The latest report bears particularly on the significance of spine length on the mortality of overweights. The results are still rather confusing. Overweights show a higher mortality than the average build; but, short overweights and those of medium height are different from those who are tall. In the first two classes, those with relatively short spines have lower mortality than those who have relatively long spines. Among tall overweights, on the other hand, those with relatively long spines have the better mortality. There can be no mistaking the difference between the two groups in view of the reliability of the material. It is to be noted that the higher mortality results primarily from higher rates for diabetes and the cardiovascularrenal diseases. Why it is that short men and those of medium height should behave so differently from tall men on the score of their spine length, it is difficult to say, and further investigation is called for to clear this point up. Possibly, it will be necessary to consider in future investigation not only the element of the relative spine length of overweights, but also the chest capacity. The Committee of the Association of Life Insurance Medical Directors will, therefore, continue the investigation and include the chest measure as an additional factor.

HEALTH RECORD FOR OCTOBER, 1924.

The October deathrate of the Industrial policyholders (8.3 per 1,000) was identical with that for September, the usual seasonal rise not being in evidence this year. This condition emphasizes the very satisfactory health situation which now prevails throughout the United States and Canada. This year's October rate is lower by five per cent. than that for October, 1923.

The table on page 11 shows quite general improvement throughout the list of the principal causes of death as compared with October a year ago. In the few instances where this year's figures are higher the increases are small. All of the epidemic diseases of children have recorded declines, that for diphtheria being the most pronounced. The 1924 diphtheria record has been uniformly encouraging. Not

once this year has any month's deathrate for this disease failed to show a drop as compared with the corresponding month of 1923. The October typhoid rate of 6.2 per 100,000 is the lowest we have ever recorded for this disease during that month. Tuberculosis mortality was lower by 6.8 per cent. than in October a year ago, and deaths from cancer by 8.8 per cent. The pneumonia rate declined slightly despite the Company's greater coverage this year of infant lives. This has increased its liability to higher pneumonia mortality, as bronchopneumonia, particularly, has its highest incidence in infancy.

There were fewer homicides, fewer accidents, and even fewer automobile fatalities this October than a year ago.

Deaths from influenza increased a little over last year's October figure but the deathrate remained low. Diabetes mortality was higher than that recorded during the same month of last year and this was also true in September, reversing the experience for prior months of this year. The cumulative, or year-to-date rate for diabetes, nevertheless, still shows marked improvement over 1923.

The general deathrate for the large cities of the United States during October was 11.3 per 1,000, being the same as for October, 1923. There was a slight rise as compared with September of this year. Comparison with September shows more reported cases of diphtheria, influenza, measles, scarlet fever, smallpox and typhoid fever, with less sickness from malaria, poliomyelitis and whooping cough. Compared with October of last year, there were more cases of influenza, poliomyelitis, smallpox and whooping cough, but less diphtheria, malaria, measles, scarlet fever and typhoid fever.

The most outstanding instance of increased diphtheria prevalence in October was reported from Indiana, where the number of cases rose from 163 in September to 332 for the first four weeks of October. The corresponding figures for New York State were 285 and 431. Reported measles cases in New York increased from 124 in September to 330. In Peterson, New Brunswick, a school was closed for two weeks owing to a severe outbreak of measles.

There was less poliomyelitis in October, but more or less severe outbreaks were reported from certain localities. It became necessary to close the schools at Tacoma, Wash., as well as those of a number of other communities in that state. During a five-week period, beginning with September 1, 92 cases with 9 deaths had been recorded in Tacoma. In Sturgis and in Sherman Township, St. Joseph County, Michigan, it became necessary to close the schools.

There were a number of scarlet fever outbreaks in October and the disease prevailed in Connecticut and Massachusetts to a much greater extent than during the preceding month. Manchester, New Hampshire, reported an epidemic with 130 cases on October 10. Castalia, Ohio, with a population of but 300, had 21 cases under quarantine at one time.

In Minnesota, 194 cases of smallpox were reported in October, as compared with 81 in September. In Minneapolis, 27 persons died during the later month. One hundred and thirteen persons were under quarantine and thousands were reported waiting to be vaccinated. The disease has been increasing in Illinois where 132 cases were reported for the first four weeks of October, as against 33 during September. The type of smallpox prevailing in this state this year is more severe than last year, and the outlook for the winter and spring is a matter of some concern. More than 50 cases of smallpox were reported from Fresno County, California, on October 17. The New York State Health Department early in the month stated that an epidemic existed in Amsterdam, where there were approximately 70 cases. All children who would not submit to vaccination were to be excluded from the city schools. According to a newspaper report 75,000 persons had been vaccinated in Rochester since October 1. Seventy-nine cases and one death occurred in the State Hospital for the Insane at Austin, Texas. Here the disease was first diagnosed as chickenpox. In Buchanan, Saskatchewan, all school children were compelled to be vaccinated and all public gatherings were postponed owing to an outbreak of smallpox.

There was an outbreak of typhoid fever in Fitchburg, Mass., where ten persons were confined to hospitals. In Lorain, Ohio, where it has been found difficult to maintain the sanitary standards prevailing before the recent tornado, 147 persons were inoculated against typhoid. An outbreak of the disease was reported from Salt Lake City, Utah. Leprosy was reported from California and from Elizabeth, N. J., and cases of typhus fever were discovered in California, Maryland, Georgia and Texas.

At Houston, Texas, guests at a hotel were removed to the Municipal Isolation Hospital following a death from what was diagnosed as yellow fever. A quarantine district was established for four blocks around the hospital.

The law creating in Iowa a State Department of Health, to be administered by a Commissioner, became effective October 28. The Commissioner is appointed by the Governor. There will also

be a State Board of Health which will act in an advisory capacity and "consider and study the entire field of legislation and administration concerning public health, hygiene and sanitation."

The Philadelphia Health Department, cooperating with other health and social welfare agencies, will conduct an extensive health experiment, for a period of three to five years, in the territory bounded by Frankford, Delaware and Girard Avenues, and Oxford Street, a community comprising a population of about 30,000. The object will be to learn how this community reacts to intensive health and social welfare work. The community plan has been tried in New York, New Haven, Boston and Detroit, but not, heretofore, in Philadelphia.

In Denver, October 14 to 18, a concerted drive was made to eradicate rats. It is estimated that the annual loss due to them in that city approximates $550,000.

The table below shows the mortality among Industrial policyholders for October, 1924; September, 1924; October, 1923, and for the year 1923.

METROPOLITAN LIFE INSURANCE COMPANY.

Deathrates† per 100,000 for Principal Causes, Premium-paying Business in Industrial Department.
(Annual Basis.)

MONTHS OF SEPTEMBER AND OCTOBER, 1924, AND OF OCTOBER, 1923.

CAUSES OF DEATH	RATE PER 100,000 LIVES EXPOSED†			
	Oct. 1924	Sept. 1924	Oct. 1923	Year 1923
TOTAL—ALL CAUSES	832.7	834.5	877.3	928.2
Typhoid fever	6.2	8.1	6.5	5.1
Measles	.8	.6	2.1	9.5
Scarlet fever	1.7	1.2	2.3	4.4
Whooping cough	4.8	8.5	6.8	7.4
Diphtheria	11.0	7.3	17.2	15.5
Influenza	5.7	3.6	4.6	30.3
Tuberculosis (all forms)	90.6	88.9	97.2	110.1
Tuberculosis of resp'y system	80.4	78.2	87.1	99.7
Cancer	69.6	72.8	76.3	71.8
Diabetes mellitus	15.3	14.2	14.3	16.0
Cerebral hemorrhage	58.1	52.0	56.9	61.2
Organic diseases of heart	113.9	108.9	113.6	127.3
Pneumonia (all forms)	56.1	37.6	56.7	83.9
Other respiratory diseases	12.5	9.7	9.8	13.9
Diarrhea and enteritis	48.0	71.8	55.4	28.2
Bright's disease (chronic nephritis)	62.3	59.4	64.2	68.8
Puerperal state	14.7	14.8	14.6	17.7
Suicides	7.2	8.0	6.4	7.3
Homicides	7.3	7.1	9.7	7.3
Other external causes (excluding suicides and homicides)	61.4	63.2	68.0	62.9
Traumatism by automobile	16.9	18.8	19.1	15.3
All other causes	185.7	196.8	194.6	179.4

†All figures include infants insured under one year of age.

Correspondence on the subjects discussed in these BULLETINS may be addressed to: The Editor,

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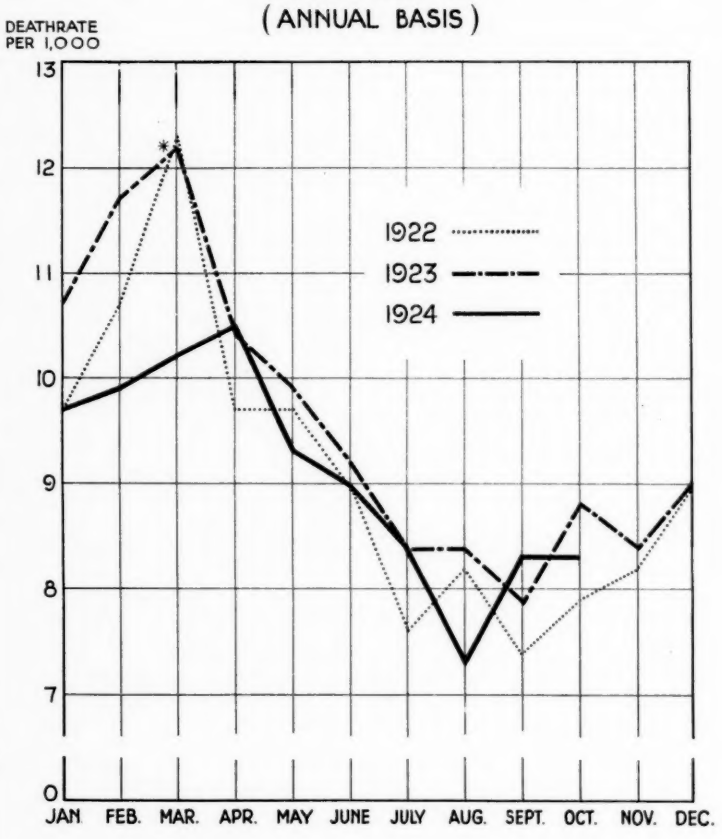
DEATHRATE PER 1,000 *in* SPECIFIED MONTHS *of* 1922, 1923, 1924

METROPOLITAN LIFE INSURANCE COMPANY
INDUSTRIAL DEPARTMENT
(ANNUAL BASIS)



	1922	1923	1924		1922	1923	1924
JAN.	9.7	10.7	9.7	JULY	7.6	8.4	8.4
FEB.	10.7	11.7	9.9	AUG.	8.2	8.4	7.3
MAR.	12.3	12.2	10.2	SEPT.	7.4	7.9	8.3
APR.	9.7	10.4	10.5	OCT.	7.9	8.8	8.3
MAY	9.7	9.9	9.3	NOV.	8.2	8.4	
JUNE	9.0	9.2	9.0	DEC.	9.0	9.0	

* Beginning with March, 1923, figures include mortality of infants under one year of age.

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